EPA/OPP MICROBIOLOGY LABORATORY
ESC, Ft. Meade, MD

Standard Operating Procedure
for
Cleaning and Disinfection of Recirculating Chillers

SOP Number: QC-04-02

Date Revised: 09-20-02

Prepared By: _____ Date: ___/___/___

Print Name:_____

Reviewed By: _____ Date: ___/___/___

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Technical Staff

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QA Officer

_____ Date: ___/___/___

Print Name:_____

Laboratory Director

Date Issued: ___/___/___

Withdrawn By: _____ Date: ___/___/___

Copy No.: _____

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1.0 SCOPE AND APPLICATION:

1.1 This protocol describes the method used to clean, disinfect and enumerate the heterotrophic bacterial population in the recirculating chillers used for disinfectant efficacy testing.

2.0 DEFINITIONS:

2.1 TGYE agar = tryptone-glucose-yeast extract agar

2.2 TSA = trypticase soy agar

2.3 CFU = colony forming unit

2.4 Chiller water bath = the remote water bath into which the recirculating chiller pumps water and where the cooling of disinfectant tubes occurs.

3.0 HEALTH AND SAFETY: Not applicable

4.0 CAUTIONS:

4.1 High total ionized solids (TIS) can accelerate the rate of galvanic corrosion and promote the growth and proliferation of undesirable microbiologicals (algae, bacteria, and fungi) in the recirculating water. The tank water should be filled with DI water when not drained on a weekly basis.

4.2 To restrict the growth of algae in the bath, the bath cover should be kept in place.

5.0 INTERFERENCES: None

6.0 PERSONNEL QUALIFICATIONS:

6.1 Personnel are required to be knowledgeable about the procedures in this SOP. Documentation of training and familiarization with this SOP can be found in the training file for each employee.

7.0 SPECIAL APPARATUS AND MATERIALS:

7.1 Neslab RTE 220 Series Refrigerated Bath/Recirculating chiller #1 Serial Number 92JML39480-4.

7.2 Neslab RTE 221 Series Refrigerated Bath/Recirculating chiller #2 Serial Number 199019023.

7.3 Neslab RTE 221 Series Refrigerated Bath/Recirculating chiller #3 Serial Number 199019021.

7.4 Neslab RTE 221 Series Refrigerated Bath/Recirculating chiller #4 Serial Number 100188013.

7.5 Neslab RTE 221 Series Refrigerated Bath/Recirculating chiller #5 Serial Number 100188015.

7.6 Neslab RTE 221 Series Refrigerated Bath/Recirculating chiller #6 Serial Number 100110060.

7.7 Neslab RTE 221 Series Refrigerated Bath/Recirculating chiller #7 Serial Number 100143018.

8.0 INSTRUMENT OR METHOD CALIBRATION: Not applicable

9.0 SAMPLE HANDLING AND STORAGE: Not applicable

10.0 PROCEDURE AND ANALYSIS:

10.1 The recirculating chillers should be drained and cleaned/disinfected on a weekly basis when in use.

10.2 Draining/Disinfecting the Recirculating Chiller Water.

10.2.1 On a weekly basis, following testing, disinfect the water in the recirculating chiller and remote water bath prior to draining.

10.2.2 Disinfect the water by adding the appropriate amount of a disinfectant labeled for use against the test organisms (e.g.

Lysol I.C., EPA Reg. No. 675-43) to the recirculating chiller and remote water bath. Follow label directions for use. Record information on the Recirculating Chiller Cleaning and Disinfection Log (see 16.2).

10.2.3 After the disinfectant is added, the unit should be turned on and run thoroughly. Turn off the unit and allow the disinfectant to remain in the unit for the specified contact time (e.g. 10 minutes).

10.2.4 Each recirculating chiller is equipped with a drain valve and a drain hose located on the back of the unit. With the unit off, open the valve and allow the reservoir contents to drain into an appropriately sized container or directly into a sink.

10.2.5 Rinse the unit by filling it with tap water. Allow it to run for approximately 10 minutes. Turn off the unit and drain as above. Refill the reservoir with fresh tap water on the day of testing.

11.0 DATA ANALYSIS/CALCULATIONS: None

12.0 DATA MANAGEMENT/RECORDS MANAGEMENT:

12.1 Data will be recorded promptly, legibly and in indelible ink on the appropriate form (see 16.0). Completed forms are archived in notebooks kept in locked file cabinets in file room D217. Only authorized personnel have access to the locked files. Archived data is subject to OPP's official retention schedule contained in SOP ADM-03, Records and Archives.

13.0 QUALITY CONTROL:

13.1 The OPP Microbiology Laboratory conforms to 40CFR Part 160, Good Laboratory Practices. Appropriate quality control measures are integrated into each SOP.

13.2 For quality control purposes, the required information is documented on the Recirculating Chiller Cleaning and Disinfection Log (see 16.0).

14.0 NONCONFORMANCE AND CORRECTIVE ACTION: None

15.0 REFERENCES: None

16.0 FORMS AND DATA SHEETS:

16.1 Recirculating Chiller Cleaning and Disinfection Log

Recirculating Chiller Cleaning and Disinfection Log

OPP Microbiology Laboratory

INFORMATION			
Chiller #	Location	Date/Init.	

* Record the action performed, i.e. disinfected, drained, cleaned, etc.